CA13.4.2
Revise as follows:

For Design Case 1, the deck overhang shall ~~may~~ be designed to ~~provide a flexural resistance, M_s in kip-ft./ft. which, acting coincident with~~ resist the combined effects of tensile force T in kip/ft. and moment M_{ct}, as specified herein, ~~exceeds M_c of the parapet at its base. The axial tensile force, T, may be taken as:~~

$$\cancel{T = \frac{R_w}{L_c + 2H}} \quad T = 1.2\left(\frac{F_t}{L_c}\right) \qquad \text{(A13.4.2-1)}$$

$$M_{ct} = 1.2\left(\frac{F_t H}{L_c}\right) \qquad \text{(A13.4.2-2)}$$

where:

~~R_w = parapet resistance specified in Article A13.3.1 (kip)~~

L_c = critical length of yield line failure pattern (ft.) In the absence of more accurate calculations, L_c may be taken as 10 ft for Caltrans Standard Barriers Type 25, Type 732, Type 736 and Type 742; this value of L_c is valid for design forces TL-1 through TL-4 shown in Table A13.2-1. At the location of expansion joints, the value of L_c shall be half that specified above.

H = height of wall (ft.)

T = tensile force per unit of deck length (kip/ft.)

M_{ct} = Moment in the in the deck overhang due to F_t (kip-ft./ft.)

CA13.4.2
Revise as follows:

~~If the deck overhang capacity is less than that specified, the yield line failure mechanism for the parapet may not develop as shown in Figure CA13.3.1-1, and Eqs. A13.3.1-1 and A13.3.1-2 will not be correct.~~

In the design of barrier rails, it is recognized that the crash testing program is oriented towards survival, not necessarily the identification of the ultimate strength of the railing system. This typically produces a railing system that is significantly overdesigned, and in turn would lead to an over-design of the deck overhang that may not be practical.

Therefore, the design of deck overhang for Design Case 1 is based on F_t, the transverse force on the barrier rail corresponding to the Test Level as shown in Table A13.2-1, not on the capacity of the barrier rail. To account for uncertainties in the load and mechanisms of failure, and to provide an adequate safety margin, the actual design tensile force acting on the deck overhang and the corresponding design moment obtained through statics are increased by 20%.

When Type 26 barrier rail is used, the design variables for overhang design should be taken as the same as those for Type 732 since barrier upgrade at a later date is possible. For other barrier types not listed, a more a more rigorous calculation should be made to compute L_c.

At an expansion joint, and at the beginning and end of a bridge, the value of L_c will be half that at intermediate locations. This will cause an increase in demands in the overhang region. Consequently, the top reinforcing bars in the overhang should be designed to accommodate this increased demand in this region.